Mental Health Disorders, Psychological Distress, and Suicidality in a Diverse Sample of Lesbian, Gay, Bisexual, and Transgender Youths

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Objectives. We examined associations of race/ethnicity, gender, and sexual orientation with mental disorders among lesbian, gay, bisexual, and transgender (LGBT) youths.

Methods. We assessed mental disorders by administering a structured diagnostic interview to a community sample of 246 LGBT youths aged 16 to 20 years. Participants also completed the Brief Symptom Inventory 18 (BSI 18).

Results. One third of participants met criteria for any mental disorder, 17% for conduct disorder, 15% for major depression, and 9% for posttraumatic stress disorder. Anorexia and bulimia were rare. Lifetime suicide attempts were frequent (31%) but less so in the prior 12 months (7%). Few racial/ethnic and gender differences were statistically significant. Bisexually identified youths had lower prevalences of every diagnosis. The BSI 18 had high negative predictive power (90%) and low positive predictive power (25%) for major depression.

Conclusions. LGBT youths had higher prevalences of mental disorder diagnoses than youths in national samples, but were similar to representative samples of urban, racial/ethnic minority youths. Suicide behaviors were similar to those among representative youth samples in the same geographic area. Questionnaires measuring psychological distress may overestimate depression prevalence among this population. (*Am J Public Health.* 2010;100:2426–2432. doi:10.2105/AJPH.2009.178319)

Population-based studies estimate the prevalence of internalizing and externalizing mental health disorders to be higher among lesbian, gay, and bisexual (LGB) adults, although associations by specific subgroup and definitions of sexual orientation have varied across studies.[1,2] Less research has been done among LGB youths, but such studies suggest that mental health disparities can emerge or exist during adolescence.[3–6] Such studies have played an important role in characterizing and calling attention to the mental health needs of the LGB population across developmental stages.

There are several limitations in the current state of knowledge about the mental health of LGB youths. First, previous studies have focused almost exclusively on suicidal intentions and attempts instead of mental health disorders. Many random population surveys of youths in schools and national studies of adolescents have reported associations between aspects of suicidality and LGB identity,[7–9] same-gender attractions,[8,10] and same-gender behavior.[8,11–13] Second, studies focused on mental health have primarily relied on symptom or distress scales such as the Brief Symptom Inventory (BSI) or the Center for Epidemiological Studies Depression Scale (CES-D)[5,6,10,14–16] instead of using structured diagnostic interviews to examine mental health diagnoses. Such scales may measure general psychological distress rather than depression, and the scales may have low positive predictive values in nonclinical samples.[17] Measures tapping psychological distress could also inflate estimates of depression in stigmatized or victimized communities, thus increasing distress without causing clinical depression. There is only 1 published study that used structured diagnostic interviews in a probability sample that identified LGB youths; the odds of major depression and conduct disorder were approximately 4 times greater among 28 LGB youths than they were among 979 heterosexual youths.[4]

Third, population-based samples tend to have very few LGB-identified respondents, which often means that this heterogeneous group must be collapsed together. Because such studies tend to include a higher proportion of bisexual youths than of gay or lesbian youths (on the basis of attraction and behavior indices), combining these groups causes a disproportionate representation of the experiences of bisexual youths.[8] In this population, previous findings have been inconsistent with regard to gender differences in depression symptoms[10,18,19] and the effect of the interaction between gender and sexual orientation (bisexual vs gay or lesbian) on suicide intentions and attempts.[8] Community-based sampling approaches can complement these population-based studies by exploring differences between LGB persons who were born male versus born female, lesbian or gay versus bisexually identified, and persons of different races/ethnicities. Finally, most studies have not had sufficient numbers of transgender participants to report descriptive statistics on this understudied population. One study of a community sample of 51 male-to-female transgender youths found no evidence of elevation on a depression scale, but the study did find high levels of substance use and victimization.[20] Such findings warrant further attention, despite the difficulty of recruiting transgender youths.

Many efforts to explain mental health disparities among LGB and transgender (LGBT) populations have used variants of minority stress theory, which posits that internal and external manifestations of prejudice, victimization, and social stigma underlie health differences.[21,22] On the basis of this theory, Meyer et al. posited[23] that LGBT racial/ethnic minorities will have more mental disorders as a result of prejudice

and discrimination from the majority on the basis of their race/ethnicity, as well as prejudice and discrimination from within their respective racial/ethnic communities, which have sometimes been found to harbor attitudes toward homosexuality that are more negative than those held among the White population.[24,25]

Similarly, bisexual and transgender individuals might experience more mental disorders resulting from being exposed to stigma both in the majority population and in the LGBT community. Bisexuals may be stigmatized by the majority for not being heterosexual, and they may be stigmatized by the gay and lesbian community for not having exclusively same-gender attractions and relationships.[26] Studies that have compared bisexuals to gay and lesbian adults[23,27] and youths[8,13,19,28] have been inconsistent in finding bisexual youths to be at increased risk for depression and suicide; some studies have found an interaction between gender and sexual orientation, most often with bisexual girls at highest risk.[8,19] Transgender individuals' mental health may be negatively affected by the fact that expressing or identifying with a gender different from the one assigned at birth may lead to social isolation, discrimination, and victimization.[20,29,30]

We sought to fill some of the gaps in previous research by conducting structured diagnostic interviews with a community sample of LGBT youths. On the basis of minority stress theory and previous findings, we hypothesized that: (1) racial/ethnic minority LGBT youths would have a higher frequency of mental disorders than would Whites youths, and (2) bisexual youths, particularly bisexual females, would have a higher frequency of mental disorders than would gay- and lesbian-identified youths. By including a small number of transgender youths we were also able to explore differences in mental health on the basis of gender identity.

We assessed mental disorders with evidence of disparities on the basis of sexual orientation and gender identity, including posttraumatic stress disorder (PTSD),[31] anorexia and bulimia,[32,33] depression,[3–5,15] conduct disorder,[4,11,12] and suicidal ideation and attempts.[7,8,10–12,15] Psychological distress was measured by using an instrument commonly administered in epidemiological studies to test the association with major depression. Notably, most of our participants were racial/ethnic minorities, an understudied group in terms of mental health, particularly at the intersection with sexual orientation.

METHODS

A community sample of 246 ethnically diverse youths aged 16 to 20 years and living in the Chicago area participated in this study. Participants self-identified as LGBT, "queer," "questioning," or attracted to the same gender. Participants were recruited over 18 months in 2007 and 2008 via multiple methods, including e-mail advertisements, cards, and flyers distributed in LGBT-identified neighborhoods and at LGBT-identified events, and incentivized peer recruitment. To encourage participants to recruit peers into the study, we gave participants cards with contact information for the study, and we compensated them $10 for each eligible recruit who scheduled an interview.

Procedures

Eligibility screening included a question asking, "Project Q2 is a study for lesbian, gay, bisexual, transgender and other youths who do not use these terms but have same-sex attractions. Does this include you?" This approach to assessing eligibility allowed for the inclusion of youths who did not identify with LGBT labels but who had same-gender attractions.

Prior to enrollment, trained staff used a 2-step process to determine decisional capacity to consent. Consistent with research by Dunn,[34] the first step involved a determination of the youth's understanding of the study goals. In step 2, participants were asked questions designed to assess their capacity to understand, appreciate, thoughtfully consider, and express a choice about participation using a modified version of the Evaluation to Consent Form.[34–36] Interviewers who had any doubts about decisional capacity were instructed to consult with the study principal investigator before proceeding. Institutional review boards approved a waiver of parental permission for minor participants under 45 CFR §46.408(c), and appropriate mechanisms for protecting youths were put in place (i.e., a youth advocate, a federal Certificate of Confidentiality). Written informed consent was obtained.

Assessments were conducted in a private room at a youth center affiliated with a large LGBT community-based health center in Chicago or at the University of Illinois, Chicago. Participants received $40 for completing the interview, which lasted approximately 2 hours. Interviews were conducted in 2007 and 2008.

Measures

Diagnostic assessment. We assessed *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV),* diagnoses by means of the Diagnostic Interview Schedule for Children (DISC) version 4.0,[37] a computerized, structured interview developed for use by trained lay interviewers. The DISC is the most widely used assessment of psychiatric diagnoses among adolescents and is appropriate for use with young adults.[38] The DISC allows for only specific diagnoses of interest to be assessed, and we administered the following modules: PTSD, anorexia, bulimia, major depression, conduct disorder, and reports of suicidality. All diagnoses were for the previous 12-month period. The acceptable reliability and validity of the computerized DISC 4.0 and earlier versions have been well described.[37,38] Interviewers had advanced education in psychology and experience with the target population. Extensive interviewer training was conducted in accordance with the recommendations of the DISC developers,[38] and we used ongoing supervision and observations by a licensed clinical psychologist to ensure fidelity.

Self-reported psychological distress. The Brief Symptom Inventory (BSI 18)[39] is a self-report measure of psychological distress in the prior week. The BSI 18 has been widely used as a psychiatric screening tool in clinical settings and epidemiological studies. Previous reports found the BSI 18 to have adequate reliability and convergent validity with the longer version and related measures.[40] Following the BSI 18 scoring instructions, raw scores were converted to T scores using gender-specific community norms, and we considered a participant positive if T was greater than 62.[39]

Statistical Analyses

We estimated unadjusted frequencies and standard errors for the entire sample and demographic subsamples. Logistic regression was used to estimate odds ratios and 95% confidence intervals for differences in frequencies by demographics. We used

cross-tabulations to estimate the sensitivity, specificity, and predictive values for the BSI 18 with DISC major depression diagnosis as the criterion.

RESULTS

Table 1 summarizes demographic characteristics of the sample. Participants' mean age was 18.31 years (SD=1.32); 31% of the sample was younger than 18 years. Eighty-six percent of participants were racial/ethnic minorities, which is higher than the 69% estimated by the US Census Bureau (http://factfinder.census.gov) in the city of Chicago, but not substantially different from estimates for areas neighboring the primary site of data collection. The majority of participants were peer-recruited. Cross-tabulations and the χ^2 test were used to consider the effects of recruitment sources on study findings. No recruitment source was consistently associated with higher levels of mental disorders or suicidality, and each χ^2 test was nonsignificant, suggesting no evidence of systematic source effects.

Table 2 presents unadjusted frequency estimates of mental disorders and standard errors separately by birth sex, transgender identity, race/ethnicity, and sexual orientation subgroups. Given the small number of transgender youths (n=20; 8% of sample), it was not feasible to further break down estimates by male-to-female (n=12) and female-to-male (n=8) transgender participants. However, given the paucity of research on this population, we report these descriptive data, which generally did not show transgender youths to have elevated prevalences of mental disorders compared with others in this sample.

Table 3 reports results of the logistic regression models testing our hypotheses regarding demographic differences in mental disorders (anorexia and bulimia were too rare to be included). The "other" sexual orientation group, classified as any non-LGB identity, was included in the model to avoid deleting these 24 participants from the model. However, excluding these 24 participants had no appreciable effect on our findings. Racial/ethnic minority participants were not significantly more likely to have internalizing disorders, but were more than 7 times more likely than were White participants to meet criteria for conduct disorder.

Contrary to our hypothesis, bisexually identified youths met criteria for every diagnosis less frequently, with a statistically significantly lower likelihood of being in the composite "any diagnosis" group and of reporting a lifetime suicide attempt, and a nearly significant effect for major depression (P=.07). There were no statistically significant gender differences in disorder frequency, although there were trends for females to be more likely to report past-year (P=.08) and lifetime (P=.06) suicide attempts. Interaction between birth sex and bisexuality were not statistically significant for any outcome (data not reported). There were few consistent age differences in diagnoses among these participants, although older participants were significantly more likely to meet major depression criteria.

On the basis of established BSI 18 cutoff values, 30% of the sample had clinical levels of psychological distress in the prior week, which did not vary significantly by demographic subgroup. This is twice the frequency of prior-year major depression in this sample. Table 4 reports cross-tabulations of BSI 18 clinical distress by DISC major depression diagnosis, with 1 participant missing a BSI 18 score (analytic n=245). The 50% sensitivity indicates that half of the participants who met depression criteria were correctly identified by the BSI 18. The 74% specificity represents the proportion of cases that the BSI 18 correctly identified as nondepressed. A positive case on the BSI 18 had a 25% probability of meeting major depression criteria, and a negative case had a 90% probability of not meeting major depression criteria (positive and negative predictive values, respectively).

DISCUSSION

To our knowledge, this is the first study to report the frequency of *DSM-IV* diagnoses in a sample of LGBT youths. Overall, one third of participants met diagnostic criteria for at least 1 diagnosis. Conclusions regarding the extent to which the prevalence of mental illness is elevated in this sample will depend on the sample that is used for comparison, and such contrasts must be drawn cautiously because of differences in study methodologies.

At least 2 previous studies serve as useful comparators, both of which used structured diagnostic interviews similar to the one employed in the current study. The study that is most comparable in terms of urbanicity, racial diversity, and age examined a representative sample of 1785 emerging adults (aged 19–21 years) in south Florida.[41] Overall, and in

TABLE 1—Participant Demographics: Youths Aged 16–20 Years, Chicago, IL, 2007–2008

Variable	% (No.)
Birth sex	
Male	49.2 (121)
Female	50.8 (125)
Gender identity	
Male	43.5 (107)
Female	48.4 (119)
Male-to-female transgender	4.9 (12)
Female-to-male transgender	3.3 (8)
Sexual orientation label	
Gay	33.7 (83)
Lesbian	28.0 (69)
Bisexual	28.5 (70)
Questioning/unsure	7.7 (19)
Heterosexual (opposite-sex attracted)	2.0 (5)
Race/Ethnicity	
White	13.8 (34)
Black	57.3 (141)
Latino	11.4 (28)
Other	17.5 (43)
Living situation	
Living with parents	59.8 (146)
Other stable housing	34.5 (86)
Unstable housing	5.7 (14)
Highest education[a]	
Less than high school	5.3 (13)
Partial high school	40.2 (98)
High school	26.2 (64)
Partial college	22.5 (55)
College	5.7 (14)
Recruitment source	
Another participant	53.3 (131)
Flyers, Internet postings, community events	19.5 (48)
Staff direct recruitment	11.8 (29)
Unknown	15.4 (38)

Note. The sample size was n=246.
[a]Two participants did not report their level of educational attainment.

TABLE 2—Percentage of Respondents Meeting Diagnostic Criteria for Mental Disorders and Suicidality, by Demographic Category: Youths Aged 16–20 Years, Chicago, IL, 2007–2008

		Gender			Race/Ethnicity			Sexual Orientation	
	Total	Born Male, % (SE)	Born Female, % (SE)	Identify as Transgender, % (SE)	Black, % (SE)	White, % (SE)	Latino, % (SE)	Lesbian or Gay, % (SE)	Bisexual, % (SE)
Total, no.	246	121	125	20	141	34	28	151	70
PTSD	9.3 (1.9)	6.6 (2.3)	12.0 (2.9)	10.0 (6.9)	11.3 (2.7)	6.1 (4.2)	3.6 (3.6)	11.3 (2.6)	7.1 (3.1)
Anorexia	1.2 (0.7)	1.7 (1.2)	0.8 (0.8)	0.0	0.0	6.1 (4.2)	0.0	1.3 (0.9)	0.0
Bulimia	0.4 (0.4)	0.0	0.8 (0.8)	0.0	0.0	3.0 (3.0)	0.0	0.7 (0.7)	0.0
Major depression	15.0 (2.3)	14.9 (3.2)	15.2 (3.2)	20.0 (9.2)	14.2 (2.9)	24.2 (7.6)	7.1 (5.0)	17.9 (3.1)	7.1 (3.1)
Conduct disorder	17.1 (2.4)	16.5 (3.4)	17.6 (3.4)	15.0 (8.2)	19.1 (3.3)	3.0 (3.0)	10.7 (6.0)	18.5 (3.2)	12.9 (4.0)
Any diagnosis	33.3 (3.0)	31.4 (4.2)	35.2 (3.4)	35.0 (10.9)	36.2 (4.1)	33.3 (8.3)	17.9 (7.4)	37.1 (3.9)	24.3 (5.1)
Suicidal ideation	15.4 (2.3)	13.2 (3.1)	17.6 (3.4)	10.0 (6.9)	16.3 (3.1)	18.2 (6.8)	7.1 (5.0)	15.2 (2.9)	14.3 (4.2)
Suicide plan	8.6 (1.8)	7.5 (2.4)	9.6 (2.6)	10.0 (6.9)	9.2 (2.4)	6.2 (4.3)	3.6 (3.6)	10.0 (2.5)	5.7 (2.8)
Suicide attempt	6.5 (1.6)	3.3 (1.6)	9.6 (2.6)	10.0 (6.9)	6.4 (2.1)	3.1 (3.1)	7.1 (5.0)	7.3 (2.1)	4.3 (2.4)
Lifetime suicide attempt	31.0 (3.0)	25.8 (4.0)	36.0 (4.3)	45.0 (11.4)	31.2 (3.9)	28.1 (8.1)	32.1 (9.0)	34.0 (3.9)	21.4 (4.9)
BSI clinical case	30.0 (2.9)	29.2 (4.2)	30.7 (4.1)	38.1 (10.9)	30.3 (3.9)	32.4 (8.1)	28.6 (8.7)	27.8 (3.7)	30.0 (5.5)

Note. PTSD = posttraumatic stress disorder; BSI = Brief Symptom Inventory 18. Unless otherwise noted, report is for the previous 12 months. Psychiatric diagnoses and suicide reports were made in the Computerized Diagnostic Interview Schedule for Children.[37]

demographic subgroups, there is a pattern of considerable similarity between that study's representative sample of ethnically diverse, urban youths and the LGBT youths in our community sample with regard to major depression, PTSD, and conduct disorder (the exception being major depression in males, which was higher in the current sample). A less demographically comparable sample is the National Comorbidity Survey-Replication (NCS-R); as a national sample, it is less urban and has fewer racial/ethnic minorities.[42] The current sample of LGBT youths met criteria for every mental disorder more often than did the youngest NCS-R age group (aged 18–29 years). Such differences across samples may be attributable to sociodemographic differences (e.g., age, urbanicity, racial/ethnic diversity), which indicates the need for caution when comparing urban LGBT samples to national data.

In terms of suicidality, studies using representative samples of youths have reported an association between aspects of suicidality and sexual orientation,[7,10–12] although these findings

TABLE 3—Adjusted Odds Ratios (AORs) for Demographic Correlates of Mental Disorders and Suicide Attempts: Youths Aged 16–20 Years, Chicago, IL, 2007–2008

	PTSD, AOR (95% CI)	Major Depression, AOR (95% CI)	Conduct Disorder, AOR (95% CI)	Any Diagnosis, AOR (95% CI)	Suicidal Ideation, AOR (95% CI)	Suicide Plan, AOR (95% CI)	Suicide Attempt,[a] AOR (95% CI)	Lifetime Suicide Attempt, AOR (95% CI)	BSI Clinical Case, AOR (95% CI)
Birth sex									
Male (Ref)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.82 (0.72, 4.59)	1.29 (0.62, 2.67)	0.93 (0.47, 1.87)	1.21 (0.70, 2.01)	1.64 (0.79, 3.40)	1.53 (0.59, 3.99)	2.93 (0.90, 9.60)	1.75 (0.99, 3.10)	1.11 (0.63, 1.94)
Race/ethnicity									
White (Ref)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Racial/ethnic minority	1.47 (0.31, 6.91)	0.65 (0.26, 1.65)	7.75* (1.01, 59.28)	1.04 (0.47, 2.34)	0.81 (0.30, 2.21)	1.48 (0.31, 7.01)	1.95 (0.24, 16.21)	1.14 (0.48, 2.69)	0.98 (0.44, 2.20)
Sexual orientation									
Lesbian/gay (Ref)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Bisexual	0.52 (0.18, 1.50)	0.39 (0.14, 1.07)	0.55 (0.24, 1.26)	0.52* (0.27, 0.99)	0.94 (0.42, 2.14)	0.52 (0.16, 1.65)	0.46 (0.12, 1.74)	0.48* (0.24, 0.95)	1.14 (0.60, 2.14)
Other	0.37 (0.05, 2.92)	1.20 (0.40, 3.59)	1.22 (0.41, 3.64)	1.10 (0.45, 2.72)	1.13 (0.35, 3.66)	0.40 (0.05, 3.21)	1.28 (0.26, 6.37)	1.26 (0.51, 3.15)	1.89 (0.77, 4.65)
Age[b]	0.88 (0.63, 1.23)	1.39* (1.03, 1.89)	0.86 (0.66, 1.13)	0.96 (0.78, 1.19)	1.19 (0.90, 1.58)	1.09 (0.76, 1.57)	0.88 (0.59, 1.30)	0.97 (0.78, 1.21)	1.17 (0.94, 1.45)

Note. BSI = Brief Symptom Inventory 18; CI = confidence interval; PTSD = posttraumatic stress disorder. The sample size was n = 246. Values are odds ratios from a multivariate model that simultaneously estimates effects for all demographic factors. Psychiatric diagnoses and suicide reports were made in the Computerized Diagnostic Interview Schedule for Children.[37]
[a]Unless otherwise noted, suicide report is for the previous 12 months.
[b]Age represents the increase in likelihood of the outcome for each year of age from age 16 years.
*$P < .05$.

TABLE 4—Sensitivity, Specificity, and Predictive Values of the BSI 18, With Prior-Year Major Depression as the Criterion: Youths Aged 16–20 Years, Chicago, IL, 2007–2008

	Diagnosis of Major Depression		
BSI 18 Clinical Distress	Negative, No. (Specificity)	Positive, No. (Sensitivity)	Row Total (Predictive Value)
Negative	154	18	172 (154/172 = 90%)
Positive	55	18	73 (18/73 = 25%)
Column total	209 (154/209 = 74%)	36 (18/36 = 50%)	

Note. BSI 18 = Brief Symptom Inventory 18. The original sample size was n = 246; the analytic sample size was n = 245 because 1 participant was missing a BSI 18 score. Major depression diagnoses were made in the Computerized Diagnostic Interview Schedule for Children.[37]

have been questioned because of putative issues in the measurement of suicidality and sexual orientation.[43] Representative data on youths (grades 9–12) in the same location as the study sample are available through the Centers for Disease Control and Prevention's school-based Youth Risk Behavior Survey (YRBS; available at http://apps.nccd.cdc.gov/yrbss). The 2007 Chicago YRBS used anonymous paper-and-pencil surveys asking whether respondents, in the previous 12 months, had seriously considered attempting suicide (13.4% overall, 17.1% of females, 9.3% of males), making a suicide plan (10.4% overall, 12.2% female, 8.5% male), or making a suicide attempt (10.1% overall, 9.7% female, 10.1% male). The Chicago YRBS percentages were comparable to those in our sample. However, it is important to recognize that anonymous self-reports of suicidal ideation, plans, and attempts in both the Chicago YRBS data and the national YRBS data are higher than reports in other national studies, such as the interviewer-administered NCS-R[44] and Add Health,[44] suggesting that sample- and method-specific differences in the prevalence of suicide reports need to be taken into consideration. Furthermore, previous studies using YRBS data have found sexual orientation differences in reports of suicidality.[7,45]

A main advantage of our community-based sample of LGBT youths was that it permitted us to explore differences in the prevalence of *DSM-IV* diagnoses by race/ethnicity, sexual orientation, and gender. Similar to results for *DSM-IV* diagnoses among LGB adults,[23] racial/ethnic minority participants did not have significantly more mental disorders than did White participants, with the exception of conduct disorder. Therefore, our findings do not generally support the hypothesis of increased psychiatric morbidity resulting from additive or multiplicative social adversity that may be faced by individuals who are both racial/ethnic minorities and sexual minorities.[46]

Contrary to our hypothesis, bisexually identified youths had significantly lower odds of being positive for the "any diagnosis" composite and for lifetime suicide attempts, and there was no interaction with gender. Few studies have made comparisons between lesbian or gay and bisexual youths, but studies that have done so have produced an inconsistent pattern.[8,13,28] A comprehensive review of 9 school-based surveys found a complex and inconsistent pattern of trends in bisexual suicide attempt disparities by time, region, and gender.[8] Given the limited research in this area, it would be premature to conclude on the basis of our findings that bisexual youths have a lower prevalence of mental disorders than their gay- and lesbian-identified peers have. However, our results do not support the hypothesis that bisexual youths are at increased risk. In terms of gender, there were trends for female-born participants to have higher odds of affective disorders and suicidal ideation, plans, and attempts, which is consistent with research showing more frequent depression[47] and suicide attempts[48] among girls, starting in late adolescence.

Our study is perhaps the first to report frequencies of *DSM-IV* diagnoses among transgender individuals, a challenging population to recruit and enroll in research. Although the transgender sample size was small (n = 20), we felt it important to report descriptive data on this population's psychiatric morbidity. Although the sample size precluded tests of statistical significance, results reported in Table 2 did not suggest substantial increases in mental disorders for transgender participants.

In addition to completing a structured diagnostic interview, participants completed the BSI 18, a widely used mental health screening instrument. The BSI 18 correlates very highly with the CES-D ($r = 0.88$ in an LGB sample),[49] and such measures have been used in most epidemiological studies that have reported sexual orientation differences in depression or mental health.[5,6,10,14–16] When using *DSM-IV* diagnosis of major depression in the prior year as the criterion, we found the BSI 18 clinical case cutoff to have a low positive predictive value; only one fourth of the positive cases met major depression criteria (see Loong[50] for a review of the concepts involved in predictive power). Thus, the use of such established case norms will likely overestimate depression among LGBT youths.

The BSI 18 had a better negative predictive value; 90% of negative cases did not meet criteria for major depression. This pattern suggests that such scales are best used as global indices of psychological distress or as first-stage screening instruments, as they were initially intended to be used, and that the scales should not be relied on as proxies for diagnosis among this population. Furthermore, predictive values are not intrinsic to tests; predictive values depend on population characteristics, such as the underlying prevalence of the disorder. This is particularly relevant for comparisons of depression by sexual orientation. Until it has been established that the predictive value of such measures is invariant across sexual orientation groups, we caution against using the predictive values to conclude that true differences in the prevalence of major depression exist. For example, it is possible that LGBT youths are more prone to experiencing psychological distress because of minority stressors, but protective factors may prevent this distress from translating into a higher prevalence of mental disorders.

This study has several strengths that allow it to make a unique contribution to the limited previous research regarding the mental health of LGBT youths. Among those strengths are the ethnically diverse community sample and a rigorous assessment of *DSM-IV* diagnoses by means of an established diagnostic interview. However, findings must be interpreted in the

context of study limitations. A major limitation of this study is that we did not have a random sample. We attempted to reduce bias in our sample by encouraging peer recruitment and by not recruiting at venues that would over-represent individuals with mental disorders (e.g., support groups). Furthermore, our statistical comparisons of outcomes by recruitment sources found no consistent or significant differences. The size of our sample may also have limited our ability to detect the significance of small differences between groups.

The majority Black composition of our sample was a strength, given the limited research within this group, but it limited the study's power to test for racial/ethnic differences. Participants were recruited from a single urban geographic area with considerable racial/ethnic diversity; therefore, our findings may not generalize to other geographic areas. Finally, we did not have a comparison sample of heterosexual youths, and we instead made comparisons to existing population-based data. Such comparisons must be made with the strong caveat that methodological differences exist across studies; thus, conclusions on the basis of comparing such studies should be made cautiously. Assessment of sexual orientation and gender identity as demographic variables in future epidemiological psychiatric studies would have great value in addressing the magnitude of mental health disparities among LGBT youths.

Although the frequencies of mental disorders and suicidality in our LGBT sample may have been comparable to those found in similar representative studies of urban heterosexual youths, we emphasize that the prevalences of mental disorders and suicidal behaviors in our sample are sufficiently high to warrant special attention to the needs of this population. Contrary to our hypothesis, bisexual youths had similar or lower levels of mental disorders compared with gay and lesbian participants. Given the significant changes in the social statuses of LGBT people[24] and the use of various identity labels among youths,[51] it is possible that findings from adult samples, or from youth samples collected in the past, may no longer reflect the current relationships between sexual orientation and mental health among youths. As the social acceptance of sexual-minority identities continues to evolve, ongoing collection of data on LGBT youths may identify concomitant changes in mental health disparities. Our findings also highlight the importance of not equating commonly used self-report measures of psychological distress with a *DSM-IV* diagnosis of depression. The use of such measures has been the primary method for studying sexual orientation differences in depression among youths. We encourage the assessment of sexual orientation in future population-based studies of *DSM-IV* diagnoses, to more fully characterize mental health disparities experienced by this group. ■

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Contributors

B.S. Mustanski conceptualized the study, supervised all aspects of its implementation, and led the writing of the article. R. Garofalo helped develop and implement the study and provided clinical expertise. E.M. Emerson developed the study protocol, managed data, and provided input on analyses. All authors helped conceptualize ideas, interpret findings, and review drafts of the article.

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Human Participant Protection

This study protocol was reviewed and approved by the institutional review boards of the University of Illinois at Chicago, Howard Brown Health Center, and Children's Memorial Hospital.

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